**History of Astronomy Questionnaire – Use textbook (chpt. 22.1), HOA PPT & Recorded Lectures Parts 1-6, History of Astronomy Early Man Reading, and internet resources for HOA located on the “Links” page to complete the following questions.**

1. Who believed that some force pushed the planets along in their orbits, but couldn’t explain how?
2. What did Newton discover that also could explain why the planets move the way they do in their orbits around the sun?
3. Explain the geocentric model?
4. Who was the first Greek to propose the heliocentric model of the universe?
5. Aristarchus calculated the distance to which objects? Were the calculations accurate?
6. What were Galileo Galilei’s five most important discoveries made with a telescope? How did each support the heliocentric theory?
7. How many times did Galileo’s telescope magnify distant objects?
8. What year did Galileo build his telescope?
9. Explain why Galileo went to trial multiple times in his life and ended up under permanent house arrest?
10. What three things did Johannes Kepler discover? These discoveries were based off of whose data?
11. In what orbital path shape do planets revolve around the Sun?
12. Do planets move faster or slower when they are nearer to the sun? Identify the law of planetary motion which explains this idea.
13. Name the units that are best suited to express a planet’s distance from the sun.
14. Which group of people first conceived the geocentric model of the universe?
15. An astronomical unit (AU) is the average distance between?
16. What were the planets orbiting in the Ptolemaic System? And how was retrograde motion explained in this system?
17. What did Nicolaus Copernicus propose was at the center of our solar system?
18. TRUE/FALSE: Copernicus believed that the Earth moved around the Sun, rotated on its axis, and was planet just like the other planets observed.
19. Tycho Brahe made precise observations of \_\_\_\_\_\_\_\_\_\_\_ (planet), which later helped Kepler derive the laws of planetary motion.
20. Why was Claudius Ptolemy’s model of the universe unchallenged for nearly 13 centuries? How many years is 13 centuries?
21. What is retrograde motion and why does it occur (the correct explanation – see Copernicus’s ideas)?
22. What is the celestial sphere?
23. Who was Tycho Brahe’s brilliant, mathematics oriented assistant?
24. In what year did Claudius Ptolemy present his Ptolemaic System?
25. What did Galileo’s discovery of Jupiter’s moons imply about the nature of the universe, regarding Earth specifically?
26. What did Galileo’s discovery involving the Sun and the lunar surface imply about the nature of the universe?
27. Explain how early observations were made/conducted by ancient peoples/cultures?
28. What purpose did a structure like Stonehenge serve during its peak usage?
29. Why did early people think that gods and goddesses were responsible for what was observed in the sky?
30. When and where was the “Golden Age” of Astronomy? Explain what made this “age” so different from previous periods of astronomical practice?
31. Which famous Greek person concluded the Earth was round? How did he reach this conclusion?
32. Eratosthenes (Era-tos-th-nees) calculate the circumference of Earth nearly correctly using the angle of the noon-time Sun rays. Explain how he did this. (Hint – the diagram on page 615)
33. Which famous Greek Astronomer was known for his star catalog and stellar classification system? What did his classification system describe?
34. Which famous scientist determined the nature of the forces that keep the planets in their orbits?